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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,439	01/28/2002	Kazuyuki Kojima	02054/HG	5945
1933	7590	12/23/2003	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 767 THIRD AVENUE 25TH FLOOR NEW YORK, NY 10017-2023			DI GRAZIO, JEANNE A	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/058,439

Applicant(s)

KOJIMA, KAZUYUKI

Examiner

Jeanne A. Di Grazio

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments received September 12, 2003 have been fully considered but they are not persuasive.

Applicant has argued that "limiting the parameters as required by the present claims, provides results which could not have been expected from the art (Amendment at Page 8)." As evidence of which, Applicant has provided a Declaration Under 37 CFR 1.132. The Examiner acknowledges Applicant's later executed Declaration.

The Declaration under 37 CFR 1.132 filed September 9, 2003 is insufficient to overcome the rejection of claims 1-4 based upon comparative test results between the primary reference (Fukumoto Kunihiro et al. JP-05-295087) and Applicant's sealing agent as set forth in the last Office action because the Affidavit merely compares Applicant's sealing agent to the sealing agent taught by Kunihiro without taking into account the primary reference as modified by the secondary references (Shimada Kenichi et al. JP-01-229227 and Tan US 4,682,857).

Essentially, Applicant compares the sealing agent of Kunihiro unmodified by the secondary references to Applicant's sealing agent and arrives at the conclusion that the sealing agent of Kunihiro would not work. Applicant has not compared the sealing agent of Kunihiro as modified by the secondary references against Applicant's sealing agent.

Applicant ultimately concludes that the Kunihiro sealing agent exhibits orientation failure and sealing failure (Declaration, at Page 7).

Applicant furthermore finds that with respect to the Kunihiro sealing agent "[n]o sealing can be done." (TABLE 3, Page 5).

The Examiner notes, however, that there may have been other factors that contributed to a finding that no sealing can be done with respect to the Kunihiro sealing agent. For example, the substrate may have been contaminated or the sealing material may have been contaminated during experimentation. Furthermore, mere measurements without appropriate error measurements and statistics result in data that may be unreliable.

Therefore, the Declaration under 37 CFR 1.132 is insufficient to overcome the rejection of claims 1-4 as presented in the first Official Action.

### ***Status of Claims***

Claims 1-20 are pending. New claims 5-20 have been added.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. (JP-05-295087) in view of Kenichi et al. (JP-01-229227) and further in view of Tan (US 4,682,857).

Per claim 1: Kunihiro has photosetting and thermosetting components and a photosetting agent (Kunihiro PAJ).

Kunihiro does not appear to have a reduction in logarithm of specific resistance of liquid crystals of 8% or less.

Kenichi, however, teaches an LCD element in which a decrease in specific resistance is prevented (Kenichi PAJ).

Kenichi is evidence that one of ordinary skill in the art of liquid crystals at the time the invention was made would have had the reason, suggestion, and motivation to manufacture a sealing material in which a decrease in specific resistance is prevented to prevent flickering (contamination is obviated and therefore the display has a long life as well as high quality).

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Kunihiro in view of Kenichi to prevent flickering (contamination is obviated and therefore the display has a long life as well as high quality). In LCD technology, it is desirable to have a high voltage holding ratio (high specific resistance) because such a high voltage holding ratio (high specific resistance) prevents flickering that is caused when pixels are not fully illuminated. Thus, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to have a slight reduction in log of specific resistance to prevent flickering and for an even display quality.

Kunihiro does not appear to have a change in phase transition temperature of  $0.5^{\circ}$  Celsius or less; however, Tan has a liquid crystal temperature much less than 0.1 degree Celsius below liquid crystal phase transition temperature (Col. 1, Lines 30-36) to detect hot spots in a liquid crystal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunihiro in view of Tan to detect hot spots in a liquid crystal (Tan at Col. 1, Lines 30-36).

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. (JP-05-295087) in view of Kenichi et al. (JP-01-229227) in further view of Tan (US 4,682,857) and further in view of Watanabe et al. (US 5,150,239).

Per claim 2: Kunihiro does not appear to have reductions in weight at room temperature and at 150<sup>0</sup> Celsius of 0.05 weight % or less and 0.5 weight % or less, respectively, however, Watanabe has room temperature and temperature of 140 degrees Celsius (Col. 4, Lines 16-20) in which to selectively reduce a low molecular weight fraction in an adhesive used as liquid crystal sealant [ABS]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunihiro in view of Watanabe to prevent sealant flow (Col. 2, Lines 38-42), to prevent outgassing, and to maintain sealant adhesiveness.

Per claims 3 and 4: Kunihiro does not appear to claim the LCD element / panel using the sealant; however, Watanabe does have an LCD cell with the sealant (Claims 10 and 11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kunihiro in view of Watanabe for an LCD element with a strong adhesive seal that maximizes the life of the display.

Claims 5-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. (JP-05-295087) in view of Kenichi et al. (JP-01-229227) and further in view of Tan (US 4,682,857).

Per claims 5-11 (new): Claims 5-11 collectively claim a reduction in specific resistance of liquid crystal as determined by Measurement Method A of 5%, 2%, and 1% or less and a phase transition temperature as determined by Measurement Method B of 0.3 <sup>0</sup>C or less.

Kunihiro does not appear to explicitly specify a reduction in specific resistance of liquid crystal as determined by Measurement Method A of 5%, 2%, and 1% or less and a phase transition temperature as determined by Measurement Method B of 0.3 <sup>0</sup>C or less.

However, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to prevent a decrease in a reduction in logarithm as taught by Kenichi to prevent flicker, prevent contamination of display, and for a display of longer life. It would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made for a phase transition temperature of  $0.3^{\circ}\text{C}$  or less to detect hot spots in liquid crystal as taught by Tan. Optimization of specific resistance and phase transition temperature require routine skill in the art of liquid crystals. Optimization of a results effective variable requires only routine skill in the art (MPEP 2144.05 II).

Per claims 12-14 (new): Kunihiro has a photosetting component of a partially (meth)acrylated epoxy resin obtained by reaction of a bisphenol A-type epoxy resin (Kunihiro, PAJ) for a liquid crystal sealing agent composition that improves workability and that can be produced in a short time (Kunihiro, PAJ). Because the photosetting component is a partially (meth)acrylated epoxy resin obtained by reaction of a bisphenol A-type epoxy resin (Kunihiro, PAJ), it may be presumed that the photosetting component has a high molecular weight and has opposite polarity to that of the liquid crystal used.

Per claim 15 (new): Kunihiro in view of Kenichi and Tan disclose the claimed invention except for the photosetting agent (photo-initiator) as represented by “EY Resin KR-02”’s structural formula. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a photosetting (photo-initiator) of “EY Resin KR-02”, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. It would have obvious to one of ordinary skill in the art at the time the invention was

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made to choose a compound represented by “EY Resin KR-02” as a photosetting (photo-initiator) for its good performance as a photo-initiator.

Claims 16-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. (JP-05-295087) in view of Kenichi et al. (JP-01-229227) further in view of Tan (US 4,682,857) and further in view of Hayase (US 5,965,663).

Per claims 16 and 17 (both new): Kunihiro does not appear to explicitly specify a potential epoxy-curing agent.

Hayase, however, teaches a resin composition and resin molded type semiconductor device wherein a semiconductor chip is sealed with the resin composition being cured (Column 1, Lines 5-9). Hayase teaches that a methaphenylene diamine may be used as a curing agent because it is known to be useful as a curing agent for epoxy resin (Column 9, Lines 19-26).

Hayase is evidence that one of ordinary skill in the art of liquid crystals would have had the reason, suggestion, and motivation to select methaphenylene diamine as a curing agent because it is known to be useful as a curing agent.

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Kunihiro in view of Hayase to incorporate a curing agent of methaphenylene diamine as a known useful curing agent.

Per claims 18 and 19 (both new): Kunihiro does not appear to explicitly specify an inorganic filler of silica or talc; however, Hayase has an inorganic filler of silica or talc (Column 5, Lines 54-60) implicitly used a spacer material for separating substrates. It would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to include an inorganic filler of silica or talc as a spacer material to maintain substrate gap.



Claim 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Kunihiro et al. (JP-05-295087) in view of Kenichi et al. (JP-01-229227) further in view of Tan (US 4,682,857) and further in view of Muramatsu et al. (US 6,593,413 B2).

Per claim 20 (new): Kunihiro does not appear to explicitly specify a sealing agent of viscosity of 200,000 to 1,000,000 mPa\*s measured at 25<sup>0</sup>C or less.

Muramatsu, however, teaches a room temperature rapid-curable silicone composition wherein the composition has a viscosity of from 25 mPa\*s to 1,000,000 mPa\*s at 25<sup>0</sup>C wherein the composition has a good storage stability, is rapid-curable, becomes an elastic body with good heat resistance, moisture resistance and water-exposure adhesive properties to be used as a sealant for various electric and electronic parts [ABS].

Muramatsu is evidence that one of ordinary skill in the art of liquid crystals at the time the invention was made would have had the reason, suggestion, and motivation to modify Kunihiro in view of Muramatsu for a sealant bearing a good storage stability, is rapid-curable, becomes an elastic body with good heat resistance, moisture resistance and water-exposure adhesive properties to be used as a sealant for various electric and electronic parts [ABS].

Therefore, it would have been obvious to one of ordinary skill in the art of liquid crystals at the time the invention was made to modify Kunihiro in view of Muramatsu for a seal agent bearing a good storage stability, is rapid-curable, becomes an elastic body with good heat resistance, moisture resistance and water-exposure adhesive properties to be used as a sealant for various electric and electronic parts [ABS].

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009.

The examiner can normally be reached on M-F.

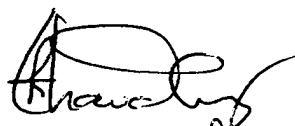
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG

  
T. Choudhury  
Primary Examiner